

Van Lennep (Wm.)

CLINICAL LECTURE

DELIVERED AT THE

Hahnemann Hospital,

PHILADELPHIA,

...BY...



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SURGICAL CLINIC.

Femoral Hernia.

Gentlemen: Our first case is a middle aged woman who has borne a number of children at rather short intervals; as a result her abdominal walls have become flabby. Besides, being the wife of a laboring man, she has had to do heavy housework, bringing undue pressure upon these weakened walls. These are the predisposing and exciting causes of the trouble for which she applies for treatment. In consequence she has a protrusion at one of the weak spots in the abdominal wall, namely the groin and umbilicus. Hers is in the former location and on careful examination we can see that it is below Poupart's ligament. When she lies down it usually disappears. When she stands up or strains, it reappears and grows larger, and when she is directed to cough the examining fingers feel a protruding push known as the "cough impulse." If the tumor is allowed to attain considerable size percussion gives a tympanitic resonance. We have then a hernia of the femoral variety, which, by the way, is pre-eminently the rupture of the female. As you will see from this diagram the abdominal contents enter the unfilled portion at the inner side of the femoral canal. This is the weak point and contains only a little loose fat. Poupart's ligament is, as you see, above; Gimbernat's ligament to the inner side; and the vein, artery and nerve, in this order, to the outer side. The protrusion goes downward along the femoral canal, comes forward out of the saphenous opening, and curls upwards over Poupart's ligament on the abdomen. In pressing the hernia back, which is known as "taxis," we must reverse this course as you see me do.

This woman has tried a variety of supporters or "trusses" to hold this protrusion back, and these have been made by skilled workmen. As soon as she resumes her housework the rupture slips out again. We can, therefore, presume that it is not controllable by a truss. Again, on a number of occasions the protrusion has been associated with cramps, constipation and vomiting. This is looked upon as the danger signal of threatening strangulation. With these two indications we are justified in undertaking an operation for radical cure. Such an operation, when we can feel sure of aseptic wound healing,

has but an infinitesimal mortality. At least one half the patients submitting to it can expect a complete cure; that is to say, they will not have to wear a truss afterward. Of the balance the majority are benefitted, that is to say, they can hold their rupture in with a truss better than before. A few, unfortunately, are worse off than before. You will find in your reading, that this is not as bright a prospect as some operators hold out, but it is what the average man can expect, and is based upon remote results instead of those noted at the time patients leave the hospital. After all, this is the only criterion.

A number of operations have been devised for the cure of femoral hernia, although they seem but few when compared with those practised in inguinal hernia. Probably the method of Bassini is the most rational and has given the most satisfactory ultimate results.

An incision is made parallel to Poupart's ligament and the tissues quickly divided, layer by layer, until the peritoneal pouch containing the protrusion, the "sac" is reached. This is opened and its contents pushed back or reduced into the abdominal cavity. Should these be intestine the hernia will be known as *enterocele*; if omentum, it would be called an *epiplocele*. The sac is now loosened up to the usually constricted point where it joins the parietal peritoneum, the "neck," where it is tied and the distal portion cut off. To obliterate any dimple which might remain to invite a recurrence it is our custom in this hospital to carry the ligated neck some distance upward inside of the muscles, away from the weak point and to a strong one, and there to anchor it by threading the ends of the ligature on needles, bringing them through the muscle and tieing them on the outside. I do this, as you see by pushing the skin and fat upward, and after the knot is tied it is buried by allowing the wound to fall together again.

Some operators fold up the sac and use it as a plug to fill the inguinal canal. This is known as the principle of Macewen. Salzer turns up the fascia covering the pectenous for the same purpose, while Cheyne makes a plug out of a portion of the muscle itself. Bassini's plan, however, is much more rational and we will use it here. By means of interrupted sutures of cat-gut we sew the under surface of Poupart's liga-

ment to the pubic portion of the fascia lata, closing the inner opening of the femoral canal. The outermost of these sutures must be applied with considerable care because of the close proximity of the vein. We then sew the falciform process down to the underlying fascia, closing the saphenous opening. These steps you can understand more readily by looking at the diagrams I have here. The overlying structures are brought together with a running, buried suture of catgut, while the skin is united by a similar one of fine black silk. Sterilized gauze wrung out of corrosive sublimate solution constitutes the dressing, which is held in place by a few adhesive strips and a spica bandage.*

Outward Dislocation of the Leg.

The second case I present to you is one of decided rarity. A laboring man received a violent wrench of the left leg, which produced the deformity you see here. The diagnosis can be made by inspection alone. You see that the leg is displaced to the outer side of the thigh. By gentle palpation, with emphasis on the *gentle*, our Golden Rule or Eleventh Commandment in the handling of injuries, I recognize that the prominence on the inner side is the internal condyle and that the inner edge of the tibia lies in the notch between the two condyles. We have then an outward dislocation of the leg, or more properly, of the tibia, as the distal bone gives the name to the luxation and the fibula does not enter into the make up of the knee joint. We have, furthermore, a partial, or sub-luxation, as the articulating surfaces of the femur and tibia have not become completely separated. We must, also, bear in mind the co incident injuries which are necessarily severe: the powerful lateral and crucial ligaments have been torn, and the largest joint in the body has suffered severe injury. We have then to fear joint effusion and inflammation of a serious character and the proverbial slow and imperfect union of fibrous tissues—dangerous inflammation and adhesions or a weak joint. Reduction is accomplished, as you see, very easily by the principle most com-

monly used in hinge joints, namely, extension and counter-extension in the direction of the deformity, with local manipulation. I now put the limb up in a long fracture box, well padded by pillows and apply to the joint this rubber bag filled with ice, the "ice bag". See that it is *kept* an ice bag, for unless constantly refilled it soon becomes a warm fomentation.*

Prostatic Hypertrophy.

Here is an old man who comes to us for urinary trouble. Sir Henry Thompson has given us a most excellent schedule for the examination of such cases. We ask four questions:

1. Frequency of urination. This he has particularly at night, seriously disturbing sleep.
2. Pain. This he refers to the hypogastrium where he has a dull ache. Before, during and after urination there are no particular symptoms except that the act is urgently called for and its performance gives temporary relief.
3. The stream. This lacks the projectile character, dropping directly downwards.
4. Blood. There is no history of haematuria.

We now proceed to an examination of his urine which we find offensively ammoniacal, cloudy and depositing an abundant sediment consisting of large stringy masses. The microscope will show triple phosphate crystals, pus and an abundance of bacteria.

Let us sum up what we have already found: an old man, frequent urination at night, a non-projectile stream, aching above the pubes and an offensive cystitis. What more should we look for to verify our tentative diagnosis of prostatic hypertrophy? Introducing the finger into the rectum I find instead of the two halves of a horse-chestnut, the upper border of which my finger should easily pass, two large masses extending beyond my reach, obstructing the lumen of the rectum to a considerable degree, and thus accounting for his difficulty in expelling stools. The lateral lobes of the prostate are then enormously hypertrophied. Such a dam produces what is known as an insufficiency of the bladder to empty itself. We must, therefore, find out

*NOTE—The wound healed without reaction and the patient was discharged wearing a truss with a broad, flat pad which does not push apart the cicatrix as a conical one would.

*NOTE—At the end of a week joint inflammation and effusion were completely under control. The limb was put up in a plaster cast and the patient sent home on crutches.

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the amount of remaining urine, called "residual." To obtain this we direct the patient to urinate and when he is through, we introduce a well-oiled, warm, aseptic Mercier catheter, the tip of which is bent upwards to ride over the prostatic dam. This lets out nearly a pint of stinking urine. Let a pint of urine stand for days in a vessel and you know the result. This explains the patient's "decomposition cystitis." The diagnosis then is lateral prostatic hypertrophy, nearly a pint of residual urine and a consequent bladder catarrh. You can readily understand that such inflammation would spread upwards through the ureters and pelvis to the kidneys, besides producing the well known "back-telling" results.

How then shall we treat such cases?

1. By a catheter to empty the bladder completely, and a good rule is to use the instrument once daily for each 4 ounces of residual urine.

2. Washings to control the vesical catarrh using solutions of boric acid (gr. xx to fl. oz of hot water.) A convenient method is to use a 25 per cent boro-glycerite instead of the powder. Thiersch's solution is advised by some (boric acid gr. xij, Salicylic acid gr. j to fl. oz.)

Both of these have been conscientiously tried and have failed. The use of the catheter has become more and more difficult and painful; painful because the prostate resents the intruder; difficult because of the increasing size of the irritated middle prostatic lobe. What then remains for us to do? To induce an atrophy of the gland and to drain the inflamed bladder. Reasoning by analogy the suggestion has been made that inasmuch as spaying causes atrophy of the uterus, castration should bring about a similar result in the analogous prostate. Hysterectomy for myomata is, as you know, a dangerous operation, and candid operators acknowledge that there is a 30 per cent mortality. Its analogue, prostatectomy, earnestly advocated by McGill, is almost as dangerous. Castration, too, has been found to produce a profound and even fatal mental impression. We can, therefore

follow the observations of the gynecologists and simply cut off the blood supply to the organs with equally good results and none of the ill effects. I open, as you see, the scrotum on either side, just below the inguinal rings; draw out successively the vas deferentia which feel somewhat like a string of beads, and divide them between two ligatures. The small wounds are closed with a stitch apiece and occluded by means of sublimate collodion (1 to 1000) incorporated in a pinch of sterilized cotton. This will cause atrophy principally of the lateral lobes, but we suspect an enlargement of the middle lobe which will not shrink to a similar degree, and there still remains the troublesome bladder catarrh which is best cured by continuous drainage. I place the patient in the Trendelenburg position, that is to say, I elevate the pelvis by raising the lower end of the table. This is the evolution of a principle accidentally hit upon by Marion Sims which you are familiar with in your gynecological clinics. By an incision through the linea alba I divide the skin and superficial fascia and split the muscles. To gain more working room I nick laterally their attachments to the pubes. Passing my finger behind the symphysis I raise what is known as the praevosal fat as an apron and in it the peritoneal fold which dips down in front of the bladder. I can now feel close to my finger the tip of an instrument which has been passed into the bladder. Instead of opening the organ, however, and allowing the putrid urine to flow over this fresh wound and those we have just made in the scrotum, I shall pack this praevosal space, which is known as the cavum Retzii, with iodoform gauze, and a week hence when granulations have become well established, we can open and drain the bladder without any danger of infiltration of urine.*

Stricture of the Urethra

The patient they are bringing in on the table is a typical example of another form of genito-urinary trouble. He has noticed for some time past an increasing difficulty in voiding his urine; gradually has had to bring the voluntary muscles of the abdomen to his assistance until finally he could pass none, but after a few hours the urine began to dribble almost constantly and involuntarily. Retention then, followed by over-

*NOTE.—A week later the bladder was opened, a large projecting middle lobe was found and trimmed off and the cavity drained by means of a T shaped or Trendelenberg tube. Later on the scrotal wound on the left side became infected by urine and healed slowly.

flow, the cause of the former giving way instead of the bladder rupturing. If you look at the lower portion of the abdomen you will see an ovoid tumor extending almost to the umbilicus. It looks and feels not unlike the pregnant uterus. In fact, I was once called to do a Cæsarean section for the bearing down pains of retention, and used a catheter instead, because they told me that the woman was passing urine "very freely," every two or three minutes. Moral:—Bear in mind the apparently contradictory axiom that frequent urination means retention. Taking the largest-sized soft rubber catheter that the meatus will admit, warmed, oiled and sterilized, I gently push it into the uretha a little bit at a time. It stops as you see between five and six inches down. Taking similar instruments of gradually decreasing size I am unable to pass the obstruction until I use this thread-like or "filiforme" instrument (another name that is a relic of the days when Paris was the centre of medical teaching).

This man, then, has an obstruction between five and six inches from his meatus in the deeper portion of his anterior uretha; that is to say in the bulb, one of the favorite locations of the cicatricial contractions or strictures following gonorrhœa.

As has aptly been said, he gave his note at 20, which he is now paying with a high rate of compound interest at 40.

To the metallic end of this filiforme bougie I screw on this grooved sound of the Maisonneuve urethrotome, and passing the instrument down the uretha the filiforme guide carries it into the bladder. I now insert a triangular knife with a button at its apex and attached to a long handle, into the groove and push it to the end of the instrument or into the bladder. The cutting surfaces are at the sides of the triangle, while the button at the apex allows it to cut only when an obstruction is met. Those of you who are close at hand will notice the difficulty with which I force it through the fibrous tissue. We have done an internal urethrotomy from before backwards on a guide. It is now easy to pass a large-sized staff into the bladder. Putting the patient into the lithotomy position we quickly open the urethra by cutting into the groove on the under surface of the staff. This is known

as external urethrotomy with a guide or the operation of Syme. All fibrous constrictions are divided until I can readily pass my finger into the bladder. I now incise the meatus downward and a little to one side of the median line to avoid the artery of the frenum, and find that I can pass without difficulty a number of graduated steel sounds. The limit to which these should be carried can be approximately arrived at by measuring the circumference of the penis which we find here to be about $3\frac{1}{2}$ inches. This is supposed to give us a means of arriving at the capacity of the urethra. For instance, a penis $2\frac{1}{2}$ inches in circumference means that the urethra will take a sound of 25 millimetres in circumference, (this is known as the French or Charriere scale); one of three inches has the capacity of a number 30 sound, of $3\frac{1}{2}$ inches, a number 35 sound and so on. This is but an approximate rule and you had better add a rather liberal plus to the number called for. The meatus being, as you know, usually a somewhat contracted portion of the canal has to be nicked. I now pass into the meatus and out of the perineal wound a pair of dressing forceps and with it draw through the anterior urethra a generous strip of iodoform gauze as is our custom in this hospital. We thus pack and dress such wounds as we have made in this portion of the canal and besides that control hemorrhage. Through the perineal incision I pass a large catheter into the bladder and around it pack and dress the wound with more strips of similar gauze. The end of the catheter will be clamped or plugged, and when he is put to bed, will be inserted into a urinal containing an antiseptic solution. In this way infection will be prevented from reaching the bladder through the tube. You will also notice that in emptying this over-distended bladder I frequently interrupted the flow and thus gave the organ a chance to contract. Sudden relief of pressure in the distended cavity is apt to be followed by an overfilling of its lax vessels. The blood rushing to this part might cause dangerous anaemia of other organs, usually important ones, especially the brain. I remember hearing a physician relate a case in which he rapidly drew off over a gallon of urine. The patient promptly died of cerebral anaemia. A week hence we will remove the gauze pack

and you will be surprised to find that after all obstructions have been removed the urine will disdain to use this open door in the perineum and turn a sharp corner to go through its old channel. Such patients will, however, have to be regularly sounded, in most instances during the balance of their lives to prevent recontraction.

Colles Fracture.

A very instructive case has just been sent up from the accident ward. This man has fallen upon his outstretched hand and has injured his wrist. You see at once by comparing the two sides a marked difference. We naturally would suspect fracture, dislocation, or sprain, and I would suggest to you a systematic plan of examination which you will find useful to follow in arriving at a diagnosis.

First—the history. A fall on the outstretched hand will produce a fracture above the wrist, occasionally a sprain of the joint and very, very rarely a dislocation of the hand.

Second—pain. Of which he complains in this region to an emphatic degree.

Third—loss of function. He cannot use his wrist.

These are the subjective symptoms. Now let us find what we can see and feel. Compare the two sides and you will notice that the hand is displaced to the radial side; also that there is a prominence of the ulnar styloid process. As I hold the forearm up before you, a very slight stretch of the imagination will remind you of what you will use at dinner to-night—a silver fork. This picture as you know is pathognomonic. We have thus made out the first objective symptom, deformity, and most of you as I see have made a diagnosis. Please note that we have not yet touched the patient, have not yet caused him any pain, and have not roughly attacked the limb as so many do to obtain that unnecessary symptom, crepitus; this is only useful in deep-seated and joint injuries, and is really of more value to tell us that the broken ends have been brought together.

The second objective symptom is abnormal mobility. This I can elicit, although it is unnecessary, by grasping the styloid process of the radius with the fingers of one hand and the

shaft of the bone with those of the other; you can thus readily see that we have two independently moving bodies. In fracture of this bone another important symptom, as you know, is the fact that when I pronate and supinate the hand the head of the radius at the elbow does not move. The third objective symptom and one of little value, being principally a distinction between fracture and dislocation, is the recurrence of the deformity after its reduction. This we do not need here.

The treatment consists of reduction and retention and the main point in Colles's fracture is the former. Therefore you will find it a good rule to etherize your patient and see that this is accurately accomplished. This is particularly important in the very common variety of fracture in this location, the impacted one. Of these we shall have opportunities, I have no doubt, to speak later on. I take the patient's hand, as if to sake it, and carry it to the ulnar side. With the thumb of the other I push the distal fragment which is displayed on to the dorsum, downward and forward until the continuity of the bone is re-established. By flexing the elbow this manipulation is made more easy. The contour of the radius being thoroughly restored we now must retain the fragments in this position. Some surgeons make light of this step, using merely a circular band or adhesive strip. Splints, however, are to be preferred for many reasons, not least of which is that of self preservation should anything go wrong. Those most commonly used are the Bond and Levis, which I here show you. Look at the under surface of my wrist and you will notice an arching of the radius. In spite of the pads used with the Bond splint, it necessarily tends to crush this arch. This Levis splint, on the other hand, is so shaped as to preserve it. So does the Carr splint, so much used in England. You will also notice that both of these splints tend to throw the hand to the ulnar side, overcoming the dislocation which is a very important lesion. The old Physick pistol splint did this alone to an extreme degree. Still a number of you must practice at a distance from an instrument shop, and certainly at the beginning of your practice will not desire to carry a long line of apparatus. You might be fortunate, also, to have a

run on Colles's fractures and use up your Levis splints. You will, therefore, find it a good plan to use a dressing of which I am very fond in this fracture. Taking a plaster of Paris bandage, as you see me do, I fold it forward and back until I make a pad of sufficient length to extend from the base of the fingers to below the elbow. This I mould to the under surface of the forearm and hand. I then apply a similar one to the dorsum. They are well padded and bandaged on, the hand being held in position and the fragments moulded into place during the hardening of the plaster. You all know how to make plaster of Paris bandages; you will all have more or less use for them in your every day practice and can keep them almost indefinitely by hermetically sealing them.

You notice that the splint extends only to the base of the fingers. One of the key-notes of treatment is to keep the fingers moving to avoid tendinous adhesions. Observe too that I said pad the splint well, and I might have added, don't bandage too tightly. You remember from your didactic lectures that one of the things to be feared in fractures of the forearm is gangrene from tight bandaging. The reason for this would appear to be that we really have three splints in this region:—the dorsal, the palmar, and the anatomical internal splint consisting of the two bones and the tough resisting interosseous membrane. Between these it is very easy to strangle the soft parts. This patient will probably wear his splint from four to six weeks. For the first few days he will be redressed daily, then at intervals of from three to five days. Possibly passive motion (pronation, supination, extension and flexion) will be made during the latter part of the treatment—free movement of the fingers is the important point—and then the splints will be taken off and he will be encouraged to use his hand. Here comes an important point for you to remember. Such a patient may leave you with an apparently perfect result, but will often return, if he is not under your constant observation, with a recurrence of the dislocation of the hand to the radial side. Why is this? Bone, as you know, unites firmly and the point of fracture is apt to be stronger than before; fibrous tissues, however, heals slowly and never

completely; therefore you should protect yourselves by warning your patients of this probability and avoid its occurrence by holding the radius and ulnar together with a wrist band while the lacerated radio-ulnar ligaments and lateral unite. As in the case of almost all fractures of the upper extremity—which come into our over-crowded hospital, we will refer this patient to the dispensary, where, no doubt, the sub-class in surgery will have an opportunity of watching the after treatment.

Hip Joint Amputation.

Our two hours are up, but it might be worth your while to wait a few minutes longer to see the next case. This lad had a septic wound in the vicinity of the left knee. As a result of this the limb is riddled with pus almost from the hip to the ankle. That it is intensely septic the olfactories of most of the class will testify. Every effort has been made to arrest this process—free incision, energetic disinfection and repeated, almost continuous antiseptic washings. That they have failed, the appearance of the boy will show—wan, emaciated, almost to skin and bone, with a hectic flush on his cheeks, a colliquative diarrhoea, an up-hill and down-dale temperature, well shown by this chart which I present to you. You well understand that any operation we might undertake is fraught with the greatest danger, and yet as I insert my finger into these different sinuses and as you see the stinking pus pour out from every one of them, you will all agree with me that the only chance for arresting this septicaemia, if not pyaemia, is to remove the limb, and this can only be accomplished by an amputation at the hip. Owing to his condition we can lose no time in performing the operation, and it must be done with the minimum loss of blood. Fortunately the bloodless method of Esmarch has been successfully applied to amputations at the hip by Wyeth. I first strip the limb of its blood by elevating it and rubbing it towards the body with my hand. This is known as the method of Lister. To apply the Esmarch bandage would probably mean to drive infection into the body. I then introduce a long steel needle just below and inside the anterior superior spine of the ilium, bringing out its point over and behind the trochanter major.

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A second one is passed inside of the saphenous opening just below the crotch. With these as a support I wrap a piece of rubber tubing tightly around the limb protecting the pin points with corks. Five or six inches below the pins I quickly make a circular amputation. While an assistant controls the femoral artery as it passes out of the pelvis the tubing is removed and I rapidly clamp the vessels. The haemostats are left in place, there being no time for the application of ligatures. The wound is stuffed with iodoform gauze and occluded with sublimate gauze dressings. Even by quick work we have shocked our patient almost to a fatal degree. Watch our anaesthetist as he applies the remedy for such a condition. Sub-cutaneous injections of heart stimulants have failed and the lad must

have a substitute for blood. The median basilic vein is opened, ligated on the distal side of the opening, and a small canula introduced and tied into the proximal side. Hemorrhage and particularly the entrance of air are thus prevented. To the canula has been attached a piece of rubber tubing which connects with this glass funnel filled with what is known as the physiological salt solution—0.6 per cent., or a heaping teaspoonful of sodium to the quart of warm, sterilized water. Beyond doubt, fatal shock has been averted in this way.

NOTE.—A week later the remainder of the femur was disarticulated through an incision for resection of the hip, this being used in order to get better drainage. The boy has gradually and steadily improved until he is now practically well.



